The noexcept Keyword Solutions

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noexcept keyword

- What does it mean if a function is noexcept?
  - The function promises not to throw any exceptions
  - If it does throw an exception, the program is terminated immediately
- Does noexcept change the signature of the function?
  - No. Functions cannot be overloaded on whether they are noexcept
- Why is it useful to know whether a function is noexcept?
  - If we are calling a function which is noexcept, we can safely assume it does not throw any exceptions
  - This makes our code simpler

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Performance advantages of noexcept

- Are there performance advantages to making a function noexcept?
  - Yes
  - The compiler can generate better optimized code
  - Standard Library containers will only call certain operators if they are declared noexcept. Otherwise, slower but safer equivalents will be called

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When to use noexcept

- When should noexcept be used
  - If we are certain a function will not throw any exceptions
  - Or we cannot do anything useful if an exception is thrown (automatic termination)

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noexcept operator

- What does the noexcept operator do?
  - It returns true/false depending on whether its argument is noexcept
- Why is this useful?
  - It allows us to make a function noexcept depending on whether an expression is noexcept
  - For example, we can make a function noexcept only if a function it calls is noexcept
  - This is useful in generic programming
- Write a simple program which demonstrates the use of the noexcept operator

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